Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Please cancel claims 1-11 from 09/477,811

Please add claims 12-22.

12. (previously presented) A system for tracking multiple targets using distributed linear sensor arrays, comprising:

a plurality of arrays of sensors for receiving signals from a target;

a receiver for receiving signals received by the plurality of sensor arrays;

an analog/digital converter for converting the signals received from the sensor arrays to a digital format, if signals are received in an analog format;

a digital storage device for storing the digitized data from the sensor arrays; and

a computer system for retrieving the stored digitized data from the plurality of sensor arrays and processing the data through the use of a composite Hough transform to determine a track of the target.

13. (previously presented) A system for tracking multiple targets using distributed linear sensor arrays, comprising:

one or more arrays of sensors for receiving signals from a target;

means for receiving signals received by the plurality of sensor arrays;

means for converting the signals received from the sensor arrays to a digital format, if required;

means for storing the digitized data from the sensor arrays; and

a computer system for retrieving the stored digitized data from the sensor arrays and processing the data through the use of a composite Hough transform to determine a track of the target.

14. (previously presented) A system, as in Claim 13, wherein the sensors for receiving signals from a target are acoustic sensors.

15. (previously presented) A system, as in Claim 13, wherein the sensors for receiving signals from a target are electromagnetic sensors.

16. (previously presented) A system, as in Claim 13, wherein the sensors for receiving signals from a target are optic sensors.

17. (previously presented) A system, as in Claim 13, wherein the receiver is an acoustic receiver.

18. (previously presented) A system, as in Claim 13, wherein the receiver is an sonar signal receiver.

19. (previously presented) A system, as in Claim 13, wherein the means for converting the signals received from the sensor arrays to a digital format, if required, is an analog-to-digital converter.

20. (previously presented) A system, as in Claim 13, wherein the means for storing the digitized data from the sensor arrays is a computer.

21. (previously presented) A computer system for processing digitized data to determine the track of a target comprising;

a data storage device;

a computer for retrieving data from the data storage device, computing a hypothesis reference track relative to a primary sensor array; and for computing a hypthesis reference track relative to the second sensor array;

said computer calculating an associated delay curve in a primary correlogram for the primary sensor array;

said computer calculating an associated delay curve in a secondary correlogram for a secondary array;

said computer accumulating data for the reference track by simultaneously integrating a series of pixel values along the appropriate delay curve in the primary and secondary correlograms;

said computer storing the accumulated pixel values in composite Hough space; and thresholding the accumulated pixel values to detect the track.

22. (previously presented) A computer system for processing digitized data to determine the track of a target comprising;

a data storage device; and

a computer for retrieving data from the data storage device and

hypothesizing a track with track parameters values (θ_1, v, D, t_{01});

generating a corresponding template delay curve in a primary correlogram;

performing integration along the template delay curve in the primary correlogram;

computing a delay curve parameter (θ_2, v/ D, t_{02}) for a secondary array based on geometric constraints;

generating a corresponding template delay curve in a secondary correlogram based on the delay curve parameter (θ_2, v/ D, t_{02});

performing integration along the template delay curve in the secondary correlogram and storing integrated values;

computing a delay curve parameter (θ_{2m}, v/D_{2m}, t_{02m}) for the secondary array based on geometric constraints;

generating a corresponding template delay curve in the secondary correlogram;

combining the integrated values and storing it in the corresponding composite Hough space; and

thresholding the accumulated pixel values to detect the track.